

## ABSTRACT OF THE DISCLOSURE

A fuel cell system and a related control method are disclosed wherein, during start-up of a fuel cell stack 1, a controller 21 operates a DC/DC converter 13 in a voltage control mode to allow an electric power to be supplied from a secondary battery 7 to a load 6 at an output voltage managed by the DC/DC converter. Under such a condition, an electric power level appearing when a voltage level of the electric power to be supplied from the secondary battery to the load lies at a value greater than an open voltage level of the fuel cell stack 1. Next, the DC/DC converter 13 is operative in an electric power control mode to allow the electric power to be supplied from the secondary battery to the load at a managed electric power output. Then, a level of the electric power to be supplied to the load is detected with the DC/DC converter 13, which permits the electric power to be supplied from the secondary battery to the load at an electric power level less than a resulting detected electric power level.